SCOTSMAN
BEVERAGE SYSTEMS

Inter-Cool 30

Water Cooled & Integral Remote Cooler

INSTALLATION MANUAL

SERIAL NUMBER

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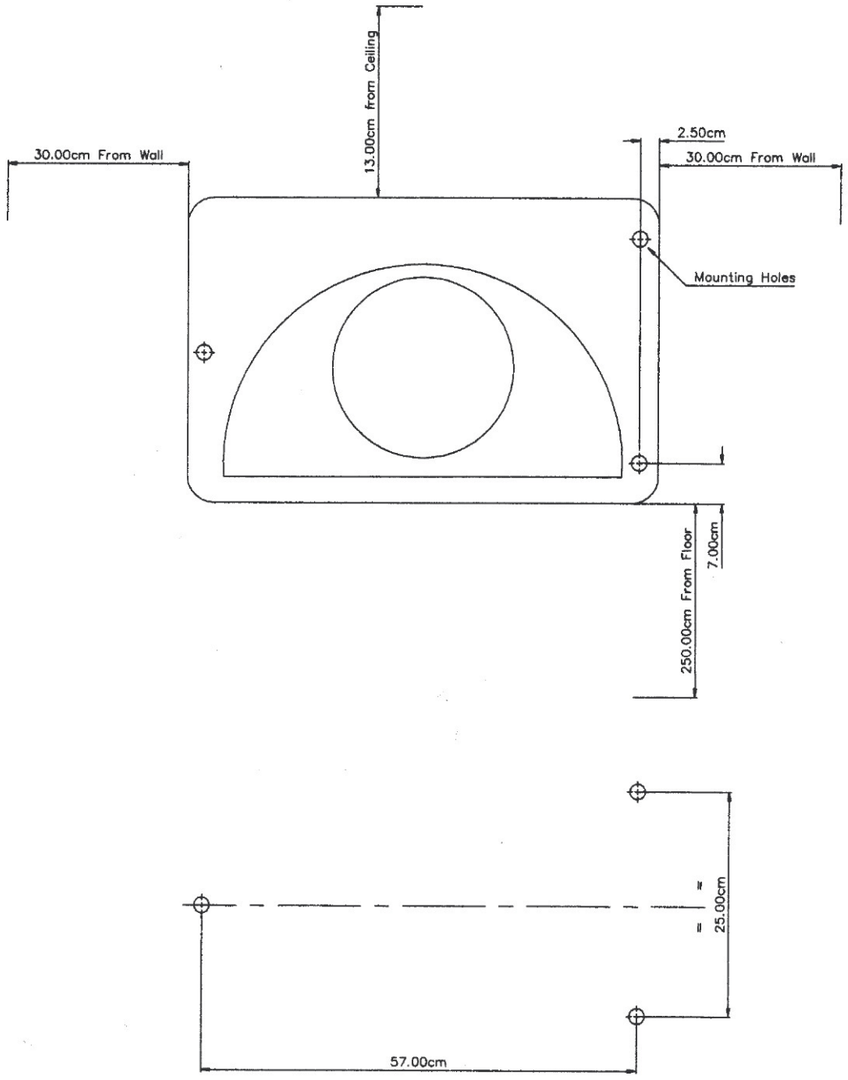
INTERCOOL 30 INTEGRAL & WATER COOLED SPARES PARTS LIST

PART DESCRIPTION		SBS PART No.	CUSTOMER PART No.
	CONDENSER FAN BLADE (BLOWER)	OP71381	
	21cc COMPRESSOR	CM73505	
	GLYCOL PUMP – 2 STAGE	PU72046-01	
	RECIRC PUMP – 3 STAGE	PU48623	
	3\8 LONG COIL	SACAEA-A01B	
	CONDENSER FAN MOTOR (16W)	MO46690	
	CASTOR	OP72053	
	ICEBANK THERMOSTAT	PI45173	
	CONDENSER	CN71855	
	24 V TRANSFORMER (90VA)	PI42544	
	GREEN NEON INDICATOR	OP71737-01	
	HEAT DUMP FAN MOTOR	MO46688	
	HEAT DUMP MATRIX (TWO PASS)	CN42989	
	3\8 SHORT COIL	SACAEA-B01B	
	HEAT DUMP FAN BLADE (SUCKER)	PI48354	
AQUACID CS 150ML (KLEENCARE)		PI42138	
GLYCOL (5 LITRES)		OP73364	
TRANSFORMER FUSE (SECONDARY 6.25A ‘T’)		PI48987	

Minimum distance for mounting the Heat Dump from vertical and horizontal surfaces



Drilling positions for mounting holes.

INSTALLATION GUIDE

GENERAL

Unpack the unit from its transportation packing and visually check for any signs of damage.
Site the unit in a convenient location in the cellar or room where it is to be sited and make sure that a Mains Electricity Supply is within 2 meters and in an area allowing free circulation of air. The unit should be fitted with a correctly fused and wired 13 amp plug fitted with a 10 amp fuse or alternatively a standard Euro Plug to IEC83:1975.
For water cooled units, site the heat dump in a convenient location, preferably in a non heat sensitive and shaded area on the outside of the building. If it cannot be installed outside, ensure that the area is well ventilated and free from other heat sources.
Please refer to the information below for particular installation requirements pertaining to the type of unit being installed.

INTEGRAL UNITS

1. Ensure the cooler is installed in a well-ventilated location with no obstructions to the condenser, or front, side and rear panel ventilation slots. The unit must not be installed in an area where it will be exposed to temperatures which are likely to cause freezing, (i.e. below 0°C) or are in excess of 32°C.
2. Ensure the unit is installed on a level surface and is filled to the overflow, with cold water below 24°C. Ideally ice should be used to reduce the water bath temperature to as low as possible, before switching the unit on. The water level must be checked and topped up once the python lines have been primed.
3. Dose the water bath with Aquacid CS cooler water control agent in accordance with instructions supplied on the bottle, taking note of health & safety instructions.
4. Ensure all tubing connections to the product coils and re-circulation pump are well insulated with Armaflex type insulation to prevent condensation.
5. Ensure that the python run is not excessive, and is routed away from external heat sources. Maximum lift is 16m.

WATER COOLED UNITS

1. Ensure the cooler base is installed in a well-ventilated location with no obstructions to the front, side and rear panel ventilation slots. The unit must not be installed in an area where it will be exposed to temperatures which are likely to cause freezing, (i.e. below 0°C) or in excess of 32°C.
2. Ensure the unit is installed on a level surface and is filled to the overflow, with cold water below 24°C. Ideally ice should be used to reduce the water bath temperature to as low as possible, before switching the unit on. The water level must be checked and topped up once the python lines have been primed.
3. Dose the water bath with Aquacid CS cooler water control agent in accordance with instructions supplied on the bottle, taking note of heath & safety instructions
4. Ensure that the header tank is filled to its maximum level with the correct ratio of water/glycol coolant mix (30%) to prevent freezing of the tubes connecting the heat dump to the base unit, which can be exposed to sub zero temperatures. (See Glycol Requirement Chart).
5. Ensure that the coolant re-circulation pump and tubing connecting to the heat dump is primed with coolant, that there are no air locks or restrictions and that coolant is freely returning into the header tank. Top up the header tank to maximum level after priming.
6. The header tank level must be regularly checked and maintained with the correct ratio of water glycol mix (30%)
7. Ensure all tubing connections to the product coils and re-circulation pump are well insulated with Armaflex
8. Ensure that the python run is not excessive, and is routed away from external heat sources. Maximum lift is 16m.
9. All water cooled units are fitting with a auto reset thermal switch to protect the compressor should the glycol level drop, the heat dump become blocked, or the glycol pump fail.

NOTE

The Water-Cooled units SHOULD ONLY be used in conjunction with the 2 Pass Heat-Dump part No 09-0202-01

HEAT DUMP INSTALLATION - GENERAL GUIDELINES

It is important that the heat dump is sited correctly to enable it to work efficiently. The guidelines below should be adhered to wherever possible.

1. Ensure the unit is sited on an outside wall (preferably non south facing) in the correct orientation out of direct sunlight.
2. Ensure there are no other heat sources, i.e. a condensing unit or another heat dump, in the immediate vicinity, where hot air may be re-circulating.
3. Use the recommended tubing (15mm O/D, 10mm I/D Special EVA) to connect the base unit to the heat dump. Do not use PVC braided tube, as this is not compatible with glycol and will degrade over a period of time.
4. Do not exceed the recommended distance and lift from the base unit to the heat dump of 10M Lift / 50M Run.
5. The heat dump must be connected using a minimum of 1.5mm two core cable. If a smaller cable is used, a voltage drop will occur which may cause the fan motor to run at a reduced speed.
6. If the unit is to be installed inside a building or room, ensure that there is adequate ventilation within the room to enable the heat to be dissipated effectively. Temperatures within the room should not exceed 32°C
7. Do not kink the flow and return tubes which would restrict the coolant flow.
8. Do not insulate the flow and return lines.
9. The flow and return lines must not be strapped together, as heat transfer between the two will affect the system performance.
10. Ensure that the heat exchanger matrix of the heat dump is kept clean and free from obstructions. It is recommended that it should be cleaned with a soft brush at regular intervals (see maintenance schedule 1a).
11. To enable the heat dump to be mounted on a flat surface, a floor standing mounting kit is available as an option. (Order part number 09-0203-01)

For details on use and mounting refer to installation instructions on pages 8 - 12.

METHODS OF CLEANING

NOTE: DO NOT USE A WATER OR STEAM HOSE TO CLEAN THE UNIT WHILST STILL INSTALLED.

NOTE: IT IS IMPORTANT THAT ALL THE VENTS AND GRILLS ARE KEPT CLEAR (Including Condenser grills where applicable).

NOTE: PERSONAL PROTECTIVE EQUIPMENT SHOULD ALWAYS BE USED.

Twice Annually: By a competent Service Maintenance Engineer:

Isolate the unit from the Base Cooler electricity supply.
Open the unit to access both sides of the condenser matrix and remove any extraneous debris from the unit or its casing preferably using a vacuum cleaner or brush.
Check unit for electrical safety

POWER ISOLATION METHOD

Switch off the socket that the base cooler unit is installed into.
Remove the plug from the socket.

Prevention of Freezing / Action required if Freezing occurs.

It is recommended that all exterior Pipework to the unit is insulated to prevent freezing. In the event of freezing up occurring, the following action is recommended :

Isolate the unit from Base Coolers Electricity Supply.
Apply gentle warmth to the general area of the unit and its Pipework, taking care not to scorch / burn the insulation tubing surrounding the pipes.

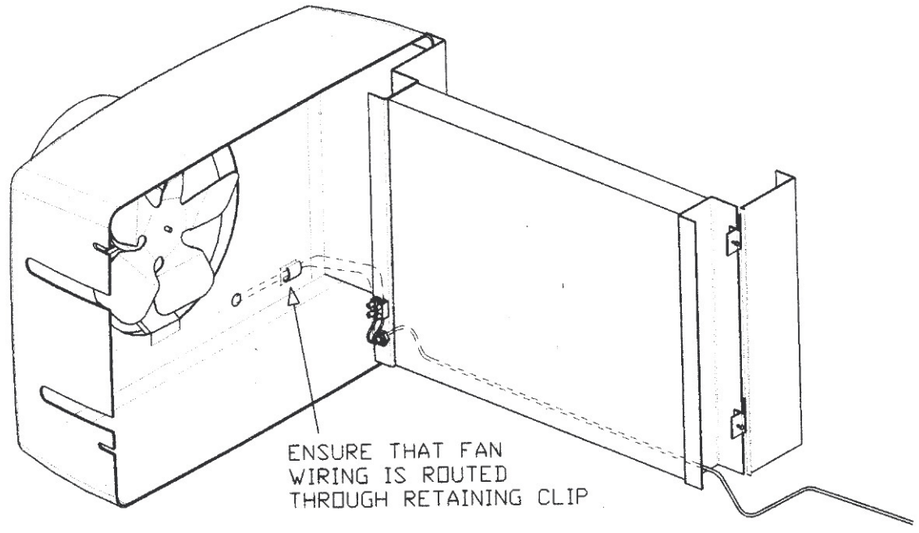
c. Check for obvious leaks.
d. Reconnect the base cooler mains electricity supply.
e. Observe the unit running for a short time watching out for leaks, strange noises or any form of malfunction. If no problems are observed, the normal operation of the unit may be resumed.

Max / Min Ambient temperatures (recommended)

Minimum -5° C. (nb. 30% glycol / water mix)
Maximum 32° C

WARNING: THIS UNIT CAN CONTRIBUTE TO THE AMBIENT TEMPERATURE.

WARNING: THIS UNIT IS UNSUITABLE FOR USE BY UNSUPERVISED CHILDREN, INFIRM OR AGED PERSON



Connect the wiring and the Pipework to the cooler following the instructions supplied with the coolerR

Recommended materials for heat dump to cooler connections.
Pipework - 15mm OD x 10mm ID COBRACOL tubing.
Cable - 1.5 mm sq., 2 core white PVC covered (no earth)
Insulation tubing - 3/8" or 1/2" ID

Use of the equipment.
This unit is intended for use in conjunction with cooling units manufactured by Whitlenge Drink Equipment Ltd.
It is designed to be connected at the end of the water/glycol recirculation lines as a means of removing heat from the cooling system.

There are **NO** other recommended uses for this unit.

DISMANTLING DECOMMISSIONING PROCEDURE

Isolate the unit from the Base cooler electricity Supply.
Disconnect the recirculating coolant inlet and Outlet pipes.

ADJUSTMENTS MAINTENANCE REQUIREMENTS

It is not recommended that the end user makes any adjustments or carries out any maintenance other than:

a Check the mains lead and plug visually for condition.
b. Check the unit and its pipework for any evidence of leaks visually.
c. It there is any accidental spillage of liquid onto the unit isolate the Base Coolers mains electricity supply before cleaning up / removing the spillage.

NOTE: THERE ARE NO USER SERVICEABLE PARTS.

CORRECT SAFE HANDLING

Handling of this unit offers no specific hazard.
Unit weight 9 kg,s (20 lbs) dry.

Recommended Guide-Lines For Use Of This Equipment

If the fridge unit is operated to make the ice-bank whilst the installation is being completed, fit a short loop to the recirculation pump line and have the pump running whilst the ice is building. This will stop any over-icing problems that may occur.

NOTE: The unit should be installed and serviced by a suitably trained person.

NOTE: Sealed plugs may be fitted to new units.

Ways the Equipment should not be used.

This unit is intended for use as a Cooling unit to cool Beers, Lagers and Ciders to the correct serving temperature. It is designed to be installed in the system between the bulk storage facility and the Dispense Head with the product(s) passing through the cooling coils(s) of the unit. There are NO other recommended uses for this Equipment.

Correct Safe Handling.

The weight of this unit is such that, other than moving it across flat ground (which is facilitated by integral Castors / Wheels) or lifting to a relatively safe height of 12" utilising two people, a Mechanical Lifting Device should be used.

Unit Weights.

Dry	66 kg,s Integral	67 kg,s Water Cooled
Operation	126 kg,s Integral	127 kg,s Water Cooled

Unit Sizes.

Ht – 910mm (inc pump) **Width** – 580mm (inc handles) **Depth** – 680mm (inc rear channels)

WARNING: THIS EQUIPMENT MUST BE EARTHED

The Wires in this Mains Lead are Coloured in accordance with the following Code:
Green and Yellow – Earth.
Blue – Neutral
Brown – Live
As the Colours of the Wires in the Mains Lead of this Appliance may not correspond with the Coloured Markings identifying the Terminals in the Plug to be fitted proceed as follows:
a) The Wire which is coloured Green and Yellow MUST be connected to the terminal in the Plug that is marked with the letter, E™ or by the earth symbol, coloured Green or Green and Yellow.
b) The Wire which is coloured Blue MUST be connected to the Terminal in the Plug that is marked with the letter, N™ or coloured Black.
c) The Wire which is coloured Brown MUST be connected to the Terminal in the Plug that is marked with the letter, L™ or coloured Red.

Dismantling / Decommissioning Procedure.

Isolate the unit from Mains Water Supply.
Isolate Product Supply from unit.
Isolate unit from coolant lines.
Drain glycol mixture in to suitable containers.
Siphon or pump out water from bath.
Allow ice bank to melt (the careful use of hot water may be used to accelerate this process).

WARNING: FAILURE TO REMOVE ALL ICE / WATER COULD RESULT IN SUBSTANTIAL AMOUNTS OF WATER BEING RELEASED FROM THE UNIT WHICH MAY BE DETRIMENTAL TO THE UNIT AND/OR ITS SURROUNDINGS AND INCREASE THE MAXIMUM WEIGHT OF THE UNIT.

Adjustment / Maintenance Requirements.

It is not recommended that the End User makes any adjustments or carries out any Maintenance other than:

a) Check the mains lead and plug Visually for condition.
b) Check the unit and its Pipework for evidence of leaks visually.
c) Check that the condenser grill and vents are not choked or obscured.

NOTE: THERE ARE NO USER SERVICEABLE PARTS

Methods of Cleaning.

NOTE: Persons performing Cleansing /Sanitizing operations MUST be competent and fully trained in safe methods of use of Cleansing / Sanitizing Agents and their applications.

NOTE: PERSONAL PROTECTIVE EQUIPMENT SHOULD ALWAYS BE USED.

NOTE: DO NOT USE A WATER OR STEAM HOSE TO CLEAN THE UNIT WHILST STILL INSTALLED.

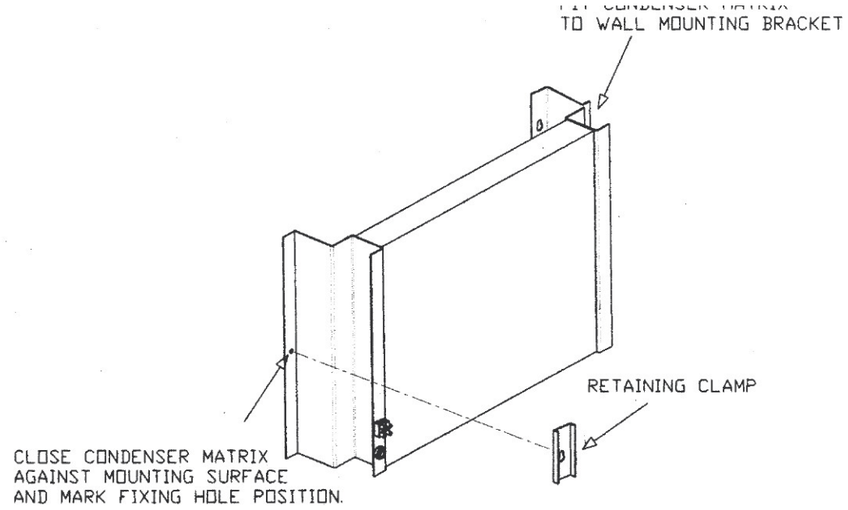
NOTE: IT IS IMPORTANT THAT ALL THE VENTS AND GRILLS ARE KEPT CLEAR (inc.: Condenser grills where applicable)

Weekly: By End User.

Isolate unit from Mains Electricity Supply.
Clean and sanitize the units cooling coils and product lines using Proprietary Cleanser / Sanitiser of the Alkaline Hypochlorite type in accordance with the Manufacturers recommendations.

Annually: By a Competent Service / Maintenance Engineer.

a) Isolate unit from Mains Electricity Supply.
b) Remove any extraneous debris from the unit or its casing preferably using a Vacuum cleaner or brush.
c) Check unit for electrical safety.



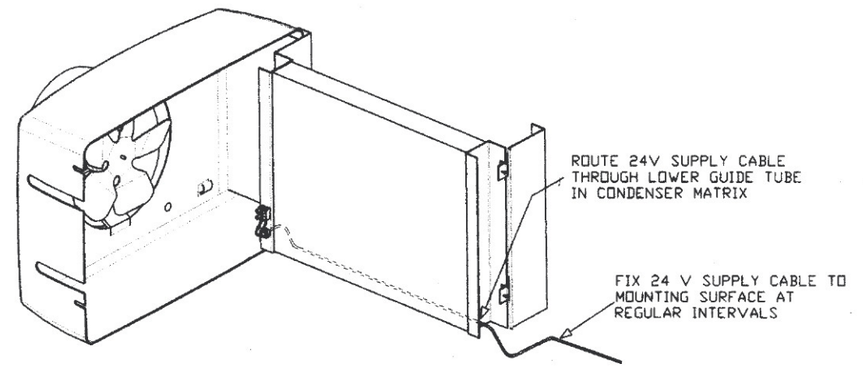
Connect the flow and return pipework from the base unit to the fittings on the heat dump labelled “FLOW” and “RETURN” and secure the pipes to the mounting surface so that the weight of the pipes is not being carried on the heat dump fittings.

Note - Do not kink the pipework as this will restrict coolant flow.
Do not insulate the pipework. (Pipework mounted on an exterior surface may be insulated if it is felt that due to extreme conditions freezing may occur).
Do not strap the flow and return pipes together as heat transfer between the two will effect the systems performance.

Route a twin core 24 volt supply cable through the lower guide tube and then through thestrain relief grommet positioned below the two way terminal block on the condenser matrix.

Note - The wires are not polarised and may be fitted either way round.

Ensure that the amount of cable entering through the main cover is not excessive and cannot become entangled in the fan blade. Tighten the strain relief grommet to support the cable . This should not be the only means of support for the cable, therefore fix back to the mounting surface at regular intervals along the cable length.



After the condenser matrix is fully fitted to the mounting surface, hang the cover/fan assembly onto its hinges.
With the cover/fan assembly open, connect the wires from the fan to the terminal block .
Note - Ensure that the wiring from the fan is routed through the plastic clip provided to prevent the possibility of the wires becoming entangled in the fan blade.

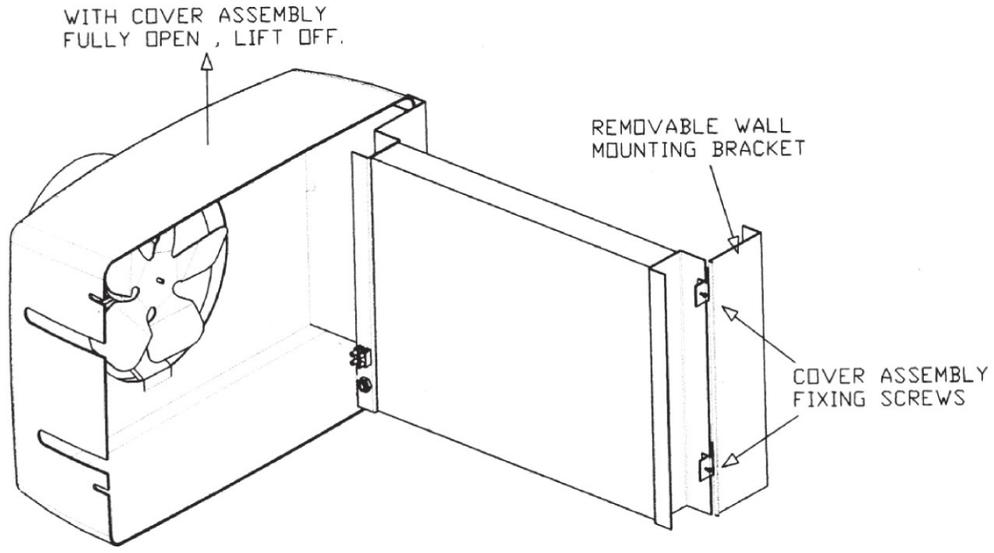
HEAT DUMP INSTALLATION INSTRUCTIONS

NOTE: The unit should be installed and serviced by a suitably trained person.

Unpack the unit from its transportation packaging and visually inspect for signs of damage.
Site the dump in a convenient location, preferably in a non-heat sensitive and shaded area
on the outside of the building. If it cannot be installed outside, ensure that the area is free from other heat sources and is adequately ventilated to prevent heat build up from the hot exhaust air from the heat dump.
In either situation the heat dump should be sited to allow free circulation of air.
The maximum recommended height of the heat dump above the cooler is 10 meters.

Fitting

Remove the wall mounting bracket from the assembly, (mounted on lift off hinges).
Slacken the two fixing screws securing the cover/fan assembly to the condenser matrix ,
swing the cover open and lift off the assembly.



With reference to the attached drawing drill the surface onto which the heat dump is to be fitted at the stated mounting hole centres ensuring that adequate clearance is allowed around the heat dump to allow future access for cleaning.

Note - the wall mounting bracket can be used as a guide for marking its hole centres . Ensure that the wall mounting bracket is mounted squarely to ensure level movement of the condenser matrix when fitted.

Either mark the position of the third mounting screw at the time of marking the wall mounting bracket position, or after fitting the wall mounting bracket hang the condenser matrix on, close against the mounting surface and mark the fixing position.

Note - the third fixing screw will pass through the hole in the condenser matrix. The retaining clamp is fitted over the screw which can then be tightened to retain the condenser matrix.

Power Isolation Method.

The unit is fitted with a single phase 3 pin 13 amp plug fitted with a 10 amp fuse or alternatively a standard Euro Plug to IEC83:1975.
Switch off the socket that the plug is plugged in to.
Remove the plug from the socket.

Prevention of Freezing / Action required if Freezing occurs.

It is recommended that the unit is sited in such a way as not to expose it to temperatures likely to cause freezing i.e. below 0°C. If the Unit is to be sited in an unheated area then it would be wise to insulate all Pipework and provide some form of Emergency Heating which should be controlled by a Frost Stat, and sited in the close proximity to the Unit.

In the event of Freezing Up occurring, the following action is recommended:-

Isolate the unit from Mains Electricity Supply.

Isolate Product Supply from unit.

Apply gentle warmth to the general area of the unit and its Pipework.

Check for obvious leaks.

Turn water supply on whilst continually watching for leaks.

Reconnect product supply.

Reconnect Mains Electricity supply.

Observe unit running for a short period watching out for Leaks, Strange noises or any other form of malfunction, if no problems are observed then normal operation of the unit may be resumed.

Max. / Min. Ambient Temperatures.

Minimum	5°C
Maximum	32°C

WARNING: THIS EQUIPMENT CAN CONTRIBUTE TO THE AMBIENT TEMPERATURE.

WARNING: THIS UNIT IS UNSUITABLE FOR USE BY UNSUPERVISED CHILDREN, AGED OR INFIRM PERSONS.

CAPACITY GUIDE

Glycol Requirement For Inter - Cool 30 water cooled Installation

30% Glycol / 70% Clean Water Mix (System Protection Down To -20c)

Python Length

Feet	10	20	30	40	50	60	70	80	90	10	11	12	13	14	17	19
Pints	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0

Metres	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48
Litres	.3	.6	.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8

Note: Add 1.7 Litres for glycol tank
The information given above is based on the use of the correctly specified tube with an internal bore of 10mm.

Length is given as total run and includes return.